



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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November 13, 2015

Ref: 8EPR-N

Brent Northrup, Project Manager
Bureau of Land Management
Canyon Country District Office
Attn: MLP Comments
82 East Dogwood
Moab, Utah 84532

RE: Moab Master Leasing Plan and Draft RMP Amendments / Draft EIS for the Moab and Monticello Field Offices, **CEQ #20150234**

Dear Mr. Northrup:

The U.S. Environmental Protection Agency Region 8 has reviewed the August 2015 Draft Environmental Impact Statement (EIS) prepared by the Bureau of Land Management for the Moab Master Leasing Plan (MLP) and Draft Resource Management Plan (RMP) Amendments for the Moab and Monticello Field Offices. Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

Project Background

The Draft EIS analyzes the potential impacts of mineral leasing decisions in the Planning Area, as managed by the BLM's Moab and Monticello Field Offices. The Planning Area covers approximately 785,000 acres of public land in Grand and San Juan Counties, Utah, and is adjacent to Arches and Canyonlands National Parks. Through the MLP process, the BLM will reconsider mineral leasing decisions within the Planning Area, and prepare amendments to the Moab and Monticello RMPs. The scope of the analysis and decisions in the MLP is limited to oil, gas and potash leasing and development.

Four management alternatives are analyzed in the Draft EIS:

- Alternative A, the No Action Alternative, would continue existing management in the Moab and Monticello RMPs;
- Alternative B minimizes impacts to sensitive resources and recreational use by limiting oil, gas and potash leasing – Alternative B1 separates oil and gas leasing and development from that for potash, while Alternative B2 would only allow oil and gas, and no new potash leasing would occur;
- Alternative C emphasizes protection of sensitive resources and recreational uses over oil and gas leasing and development, and no new potash leasing would occur; and

- Alternative D, BLM's Preferred Alternative, minimizes surface disturbance by separating oil and gas from potash development while maximizing protection for BLM lands adjoining the National Parks.

The EPA participated with the BLM in development of the Draft EIS by reviewing and providing comment on draft documents, and in particular, as a member of the technical workgroup for the air quality analysis. We appreciate the many aspects of the analysis and proposed MLP that are responsive to our recommendations provided through this process and in our May 15, 2012 scoping letter.

EPA's Comments and Recommendations

The EPA supports the high level of water resource protections included in the BLM's Preferred Alternative. The stipulations and best management practices incorporated for protection of surface water and groundwater resources are critical for protecting these valuable resources in the planning area. The EPA also appreciates the BLM's efforts to quantify, disclose and mitigate potential impacts to air quality and air quality related values (AQRVs). Our continued concerns and recommendations following review of the Draft EIS are focused on protection of water resources in the Planning Area, protection of air quality and AQRVs in Arches and Canyonlands National Parks, and analysis and mitigation of greenhouse gas emissions and climate change.

1. Water Resources

Water Resource Characterization

The EPA appreciates the detailed characterization of water resources in the Planning Area. Regarding groundwater aquifers, we recommend that the Final EIS identify which aquifers are potential Underground Sources of Drinking Water (USDWs) based on existing information. USDWs are defined to include aquifers with a concentration of Total Dissolved Solids (TDS) less than 10,000 mg/L and with a quantity of water sufficient to supply a public water system. Aquifers are presumed to be USDWs unless they have been specifically exempted or if they have been shown to fall outside the definition of USDW (e.g., over 10,000 mg/L TDS). Please note that the definition of USDW is different from the definition of groundwater "suitable for drinking water" provided in the Draft EIS, which states "Groundwater is considered suitable for drinking water with 3,000 mg/L or less of total dissolved solids and that do not exceed State and Federal groundwater-quality and health standards."

In addition, we note that the Total Maximum Daily Load (TMDL) for the Colorado River was approved in June 2014, and is no longer in Draft form as stated in the document.

Water Resource Impacts

According to the Draft EIS, there are two Sole Source Aquifers (SSA) located adjacent or close to the Planning Area. The Castle Valley SSA is the source of drinking water for the Town of Castle Valley, and the Glen Canyon SSA is the source of drinking water for the City of Moab and Spanish Valley. Although the SSAs do not overlap the Planning Area, decisions made through the MLP process may indirectly affect water quality in the aquifers. Due to their critical importance as drinking water supplies, we recommend that the Final EIS discuss potential impacts to the SSAs from mineral leasing activities within the Planning Area, and discuss how resource protection measures included in the MLP will

protect those sensitive resources. From the maps provided, it appears that many of the areas surrounding the SSA will be closed for leasing or managed as No Surface Occupancy (NSO) under the Preferred Alternative, which will afford additional protection.

The Draft EIS discusses water resource impacts common to all alternatives and provides greater detail regarding impacts specific to each alternative. It is sometimes difficult to tell from the discussion of the individual alternatives what potential adverse effects to water resources, including quality and quantity, are expected, because much of the discussion is presented in a comparative format (e.g., whether decisions specific to each alternative increase or decrease potential impacts relative to other alternatives). The EPA recommends that possible effects to surface and groundwater quality and quantity for the alternatives be more clearly discussed. If this information has already been disclosed in another section of the document, please reference here for clarity (e.g., potash water use assumptions can be found in the Minerals section). Our specific recommendations include:

- The discussion of impacts to water quantity focuses on impacts of potash development, and provides no quantitative information regarding potential impacts from oil and gas development. While oil and gas development is expected to have less impact than potash, the EPA recommends water needs and potential sources (e.g., surface water, groundwater and/or produced water) for each alternative should be clearly discussed for both potash and oil and gas exploration and production.
- We recommend that the Final EIS discuss potential impacts from leaks or spills as well as how various alternatives mitigate these impacts. Spills from drilling and production, pipelines, and potash production all have potential to significantly impact surface and groundwater resources, especially when in close proximity to a waterbody, including ephemeral and intermittent streams and wetlands, or over unconfined aquifers. This includes spills and leaks of brines as well as petroleum.
- While general impacts to surface water quality are discussed, the Draft EIS does not consider how impaired waterbodies may be impacted by possible increases in the pollutant of concern. We recommend that the Final EIS identify the specific impairment for water bodies in the Planning Area (e.g., selenium for aquatic life) and discuss whether MLP activities are anticipated to result in increases of these constituents.
- The EPA appreciates BLM's identification of one abandoned field within the planning area, 198 permanently abandoned and plugged wells (Map 3-12, Table 3-14), and a small number of temporarily plugged wells. The EPA also appreciates BLM's BMP that future plugged and abandoned wells will meet all State requirements for well closures (Appendix B, page B-17). The EPA recommends the Final EIS identify and summarize the extent of knowledge that exists, including a list of any specific closure and/or plugging records for permanently and temporary plugged and abandoned wells. The EPA also recommends, based on the existing extent of knowledge, adding an assessment and potential impact summary in the Final EIS of how effective past closures have been to protect ground water resources from any potential migration of contaminants within and/or to formations that abandoned and plugged wells are located in.

Water Resource Protection

As noted in the Draft EIS, salinity in the Upper Colorado Basin is largely attributed to nonpoint source runoff from surface disturbance of Mancos Shale derived soils. Further, the TMDL for the Colorado

River was approved in June 2014 and cites the Mancos shale derived soils as a naturally occurring source of selenium, i.e., the pollutant causing the impairment for this water body. We are concerned that the proposed timing limitations would not be sufficient to prevent these soils from contributing additional salinity to surface waters once they are disturbed. A Timing Limitation is proposed that specifies no surface disturbing activities from December 1 to May 31 to minimize watershed damage such as topsoil loss during the traditionally wet season. However, thunderstorms and other rain events in the summer and fall months could still result in erosion and sediment runoff. Due to the sensitive nature of the soils, we recommend that surface disturbance associated with activities in these areas during June through November be minimized. Further, we recommend that best management practices be required in these areas to protect from storm events and reduce sediment runoff.

The EPA continues to support the NSO stipulation proposed for Alternative C to protect the valuable groundwater recharge area in the Courthouse Wash Watershed and recommend that this stipulation be incorporated into Alternative D. We appreciate that a Controlled Surface Use (CSU) stipulation has been incorporated into Alternatives B and D that provides some protection for the sensitive water resource by requiring the use of closed loop drilling, use of tanks for produced water, and a water monitoring plan. If the BLM does not protect the area with NSO, we recommend that this CSU also include downhole protections such as well integrity tests.

The EPA appreciates that springs in the MLP area are protected with a 500 foot NSO buffer. We also appreciate that stipulations have been developed to protect key spring areas. These spring areas are defined where multiple springs in the area may be hydrologically connected by the geologic setting. Springs are a very valuable resource in the desert environment of the MLP area. Despite the 500 foot buffer around the springs themselves, impacts to the hydrologic structure of the area could still affect the quantity or quality of water in the springs. If the supporting hydrology is impacted, springs could not be restored to their prior condition. For this reason, the EPA supports the NSO stipulation included in Alternative C for the spring areas as more appropriately protective than the CSU stipulation proposed under Alternative D because it may be difficult or impossible to develop a drilling plan that “demonstrates how water resources would be protected,” as proposed in the CSU.

2. Air Quality

Far-field Air Quality

The visibility analysis indicates the potential for many days of contribution and causation of visibility impairment at Arches and Canyonlands National Parks under the modeled “high scenario.” Although impacts are projected to decrease under the “low” and “medium” scenario, Canyonlands is still projected to have 22 days of visibility impairment above 0.5 dv for the 2008 meteorological year under the low scenario. Nitrogen deposition impacts are also projected at both of the National Parks, with the greatest impacts projected at Canyonlands. The predicted nitrogen deposition impact exceeds the Deposition Analysis Threshold (DAT) for the high scenario in meteorological years 2006 and 2007 and for the high, medium and low scenarios in 2008. We recommend the BLM establish stipulations to assure that visibility is not compromised at these Class I areas as a result of future leasing decisions in the Moab Planning Area. We support the inclusion of stipulations requiring reductions in NO_x emissions and establishing a requirement for Fugitive Dust Control Plans for future activity. We recommend that the BLM discuss, in the Final EIS, whether these stipulations are expected to be adequate to protect AQRVs in Arches and Canyonlands National Parks, and establish additional requirements if necessary.

As stated in the Draft EIS, “none of the emissions scenarios represent likely future development.” Based on our review of Appendix F, this appears to be particularly true with regard to location of future sources. The methodology used to allocate future oil and gas well drilling and operating emissions did not take into account the various No Leasing or NSO buffers proposed under the Preferred Alternative on lands adjacent to Arches and Canyonlands National Parks. The Draft EIS briefly discusses the relationship between the magnitude of visibility impact and the proximity of the source to park receptor locations, based on the results of the modeling analysis. This result indicates that proposed No Leasing or NSO areas surrounding the Class I areas could significantly reduce air quality and AQRV related impacts. If applying any of these stipulations to the modeling analysis would significantly change the location of modeled emissions, we recommend doing so prior to the issuance of the Final EIS, so that the impacts disclosed are relevant to any stipulations that would be imposed by an Alternative. This will better enable the BLM to determine whether additional mitigation measures are warranted.

According to the Draft EIS, “potash production emissions estimates were not estimated or modeled due to the extremely high level of uncertainty associated with emissions estimates for this activity.” We note that if the modeling were to include these additional emissions from potash processing, then the reported impacts may be greater. At a minimum, we recommend adding a qualitative discussion of the potash mining and processing (i.e., beneficiation process) and expected air pollutant emissions. One example of a source of information on the potash process that may be helpful is entitled, *Potash Processing in Saskatchewan – A Review of Process Technologies*, by Carlos F. Perucca, available online at: <http://technology.infomine.com/hydrometmine/papers/Potash%20Processing%20in%20SK%20-%20A%20Review%20of%20Process%20Technologies.pdf>.

Near-field Air Quality

We appreciate the BLM’s efforts to disclose likely near-field air quality impacts from future MLP activities by discussing the results of previous near-field modeling conducted for projects in and near the Planning Area. We did not find the discussion of modeling performed for the Fidelity Cane Creek project to be useful to the goal stated in the Draft EIS of evaluating previous project-specific modeling “for relevance to management decisions and possible control considerations.” The AERMOD, CALPUFF, and VISCREEN modeling described for the Cane Creek Project were all focused on potential impacts to the National Parks. This does not provide any additional information that can’t be provided through the CALPUFF modeling performed for the Moab MLP and results in a confusing array of information.

We found the discussion of results of the near-field modeling analysis for the Monument Butte Project to be more helpful. We recommend that the Final EIS explain the similarities and differences between the Monument Butte Project and anticipated oil and gas development in the Planning Area to clarify the relevance of the modeling results. For instance, this could be demonstrated by discussing operating conditions and control measures, background concentrations, meteorology, and terrain. It would also be helpful to summarize the assumptions and model versions used in the air quality analysis. We note that the Monument Butte Project does not include potash development, which may result in near-field impacts that are quite different from oil and gas development. We recommend that the BLM incorporate an existing air quality analysis to provide information on potential near-field impacts of potash development, if one exists. If such an analysis does not exist, we recommend that the BLM discuss in

more detail the potash mining and beneficiation process and the likely similarities and differences in comparison to the oil and gas impacts disclosed.

While discussion of existing near-field modeling results is useful for disclosure of likely impacts at the planning stage, due to the project-specific nature of near-field air quality impacts we recommend that project-specific near-field impact analyses be conducted prior to any future proposed oil, gas or potash development in the Planning Area. We therefore support the BLM's inclusion of a lease notice informing lessees/operators that "prior to project-specific approval, additional air quality analyses may be required." If a future project instead relies on existing modeling results for disclosure of potential near-field impacts, we recommend following a similar approach to that described above to confirm the relevance of the modeling results. Where emission control measures incorporated into the modeling emissions inventory are critical to achieving compliance with the National Ambient Air Quality Standards (NAAQS), we recommend those measures be required for any subsequent projects utilizing those model results.

Cumulative Air Quality

The regional cumulative air quality analysis focuses on the results from the Western Regional Air Partnership (WRAP) WestJump Air Quality Modeling Study that uses a simulation year of 2008. While the WRAP study results presented in this section are helpful because the study performed source apportionment analyses, we also recommend discussing and presenting the results from the modeling work completed by the BLM as part of the Utah BLM Air Resources Management Strategy (ARMS). Cumulative modeling was conducted using this platform for criteria pollutants and AQRVs, including a base case and future-year projection as well as three future-year mitigation scenarios. Presenting this information will be helpful because the ARMS modeling was conducted using an updated emissions inventory and a more current modeling platform than that used for the WRAP study. If the results from the ARMS platform cannot be presented in this section, we recommend that the results of the WRAP study be utilized to present a more comprehensive depiction of impacts from an air shed perspective. For example, this could include spatial figures of the cumulative impacts for ozone and PM_{2.5} as well as a discussion of visibility results for additional locations within and near the Planning Area.

Air Quality Mitigation

We support the stipulations proposed to protect air quality in the Planning Area, as well as the Lease Notice which indicates that additional project-specific air quality mitigation measures may be identified in the future. It is our understanding that the current analysis assumes wells would not need to be hydraulically fractured, based on historical development practices in the Planning Area. If hydraulic fracturing is conducted, emissions associated with traffic and the fracturing process would increase pollutant emissions and could affect potential impacts. Therefore, if hydraulic fracturing is proposed for a future project, we recommend that the BLM require project-specific air quality analysis and consider project-specific mitigation measures, including stipulations applicable to emissions from hydraulic fracturing pump engines.

The lack of air quality monitoring data in the Planning Area, and potential need for additional monitoring to establish a baseline and detect future impacts, has been discussed among the Air Quality Technical Workgroup for this EIS, but does not appear in the document. We support additional monitoring in the Moab Planning Area which could be used to inform future project-specific modeling

efforts and mitigation decisions. We recommend the BLM use the MLP to establish a plan for the implementation of a monitoring program.

3. Greenhouse Gas (GHG) Emissions and Climate Change

We believe the Council on Environmental Quality's December 2014 revised draft guidance for Federal agencies' consideration of GHG emissions and climate change impacts in NEPA outlines a reasonable approach, and we support the BLM's use of that draft guidance to help outline the framework for its analysis of these issues. We appreciate the thorough summary discussion of climate change and ongoing and reasonably foreseeable climate change impacts provided in the Affected Environment chapter. We do note, however, that updated information is available for some of the background emission data provided for Utah, U.S. and Global CO₂ emissions (e.g., Figures 3-2 and 3-4), and we recommend that this updated information be used in the Final EIS.

We also appreciate that estimated GHG emissions have been calculated for each of the alternatives analyzed in the Draft EIS. The estimated GHG emissions can serve as a reasonable proxy for climate change impacts when comparing the proposal and alternatives. According to the Draft EIS, "CO₂eq emissions from potash operations were not calculated as there is not enough development, operations, or emission factors information available to make that calculation." If a quantitative estimate is not possible, we recommend that the BLM qualitatively discuss in more detail the potash mining and beneficiation process and likely sources of GHG emissions. It may be possible to use information from current mining processes to give general information about the amount of energy needed to produce potash, and associated GHG emissions. Information from the Department of Energy on potash energy requirements is available at: http://energy.gov/sites/prod/files/2013/11/f4/potash_soda_borate.pdf.

The discussion of potential climate change impacts associated with the planning area's anticipated GHG emissions is limited to a comparison to total U.S. emissions and total emissions for the State of Utah. Recognizing that climate impacts are not attributable to any single action, but are exacerbated by a series of smaller decisions, we do not recommend comparing GHG emissions from a proposed action to total U.S. emissions, as this approach does not provide meaningful information for a master leasing plan analysis. This rationale is similar to that noted by the CEQ revised draft guidance regarding comparison to global emissions. We recommend that the BLM provide a more meaningful frame of reference for discussion in the Final EIS. For example, the Final EIS could cite an applicable Federal, state, tribal or local goal for GHG emission reductions, and discuss whether the emissions levels are consistent with such goals, or compare emissions to a reference point that is easily visualized by the public, such as energy required to heat x number of homes annually (<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>).

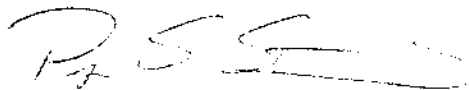
The Draft EIS does not include a discussion of mitigation to minimize GHG emissions from the proposed action. We recommend that the Final EIS describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures. For example, measures to reduce fugitive methane emissions from oil, gas and potash development or use of renewable energy sources to reduce reliance on combustion sources of CO₂ during development and operations for mineral extraction. The EPA further recommends that the Record of Decision commits to implementation of reasonable mitigation measures that would reduce future project-related GHG emissions.

Closing and EPA Rating

Based on our review, the EPA is rating Alternative D, the Preferred Alternative, as “Environmental Concerns – Insufficient Information” (EC-2). The “EC” rating means that the EPA’s review has identified potential impacts that should be avoided in order to fully protect the environment, including potential impacts to air quality and water quality. The “2” rating means that the Draft EIS does not contain sufficient information for the EPA to fully assess environmental impacts. A description of EPA’s rating system can be found at: <http://www2.epa.gov/nepa/environmental-impact-statement-rating-system-criteria>.

We appreciate the opportunity to comment on this document and hope our suggestions for improving it will assist you with preparation of the Final EIS. We would be happy to meet to discuss these comments and our recommendations. If you have any questions or requests, please feel free to contact either me at 303-312-6704 or Nat Miullo of my staff at 303-312-6233, or by email at miullo.nat@epa.gov.

Sincerely,



Philip S. Strobel
Director, NEPA Compliance and Review Program
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